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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Lewis R. Dove, et al.

Serial No.: 10/761,972

Examiner: Benny T. Lee

Filing Date: January 20, 2004

Group Art Unit: 2817

Title: DOUBLE DENSITY QUASI-COAX TRANSMISSION LINES

COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on February 28, 2006.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

(a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)(1)-(5)) for the total number of months checked below:

- |                          |              |           |
|--------------------------|--------------|-----------|
| <input type="checkbox"/> | one month    | \$ 120.00 |
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The extension fee has already been filled in this application.

(b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 50-1078 the sum of \$500.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account 50-1078 pursuant to 37 CFR 1.25.

A duplicate copy of this transmittal letter is enclosed.

Respectfully submitted,

Lewis R. Dove, et al.

By

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*4/28/06*

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Appl. No. : 10/761,972 Confirmation No. 4019  
Applicant : Lewis R. Dove, et al.  
Filed : January 20, 2004  
TC/A.U. : 2817  
Examiner : Lee, Benny T.  
  
Docket No. : 10020702-1

Commissioner for Patents  
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Alexandria, VA 22313-1450

**APPEAL BRIEF**

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**APPEAL BRIEF**

This Appeal Brief is submitted in response to the Final Office Action mailed November 1, 2005, and the Examiner's Advisory Action mailed November January 18, 2006.

Appellant filed a Notice of Appeal on February 28, 2006.

**Real Party in Interest**

The real party in interest is Agilent Technologies, Inc., assignee of the above captioned patent application. Agilent Technologies, Inc. is a Delaware Corporation having its principal place of business in Palo Alto, California.

**Related Appeals and Interferences**

There are no related appeals and/or interferences.

### **Status of Claims**

Claims 1-20 are pending in this application. Claims 1-3, 5, 8, 12, 13 and 17 currently stand rejected; and claims 4, 6, 7, 9-11, 14-16 and 18-20 stand objected to as being dependent upon a rejected base claim, but the Examiner has indicated that these claims would be allowable if rewritten in independent form. The rejections of claims 1-3, 5, 8, 12, 13 and 17 are appealed.

A copy of the claims is attached as a Claims Appendix to this Appeal Brief.

### **Status of Amendments**

An amendment after the final office action was filed on January 3, 2006. In the Advisory Action mailed on January 18, 2006, the Examiner indicated that the proposed amendments will be entered upon the timely submission of a Notice of Appeal and Appeal brief with requisite fees.

## **Summary of Claimed Subject Matter**

The invention is variously embodied. Two embodiments are summarized below.

In one embodiment, apparatus (FIGS. 2 & 3; 200, 202, 204; p. 4, lines 21-24) comprises first and second mounds of dielectric (FIG. 3; 206, 208; p. 5, lines 1-3), respectively encapsulating first and second conductors (FIG. 3; 210, 212; p. 5, lines 1-3); a third dielectric (FIG. 3; 214; p. 5, lines 3-4), filling a valley between the first and second mounds of dielectric (FIG. 3; 206, 208; p. 5, lines 1-3), and encapsulating a third conductor (FIG. 3; 216; p. 5, lines 3-4); and a first ground shield (FIG. 3; 218; ; p. 5, lines 5-8) deposited on at least sides of the first and second mounds of dielectric (FIG. 3; 206, 208; p. 5, lines 5-10), abutting the third dielectric (FIG. 3; 214, p. 5, lines 5-10).

In a second embodiment, shielded transmission lines are formed by depositing (FIG. 4; 402; p. 6, lines 15-18) first and second lower mounds of dielectric on a first ground shield; depositing (FIG. 4; 404; p. 6, lines 18-19) conductors on the first and second lower mounds of dielectric; depositing (FIG. 4; 406; p. 6, lines 19-21) first and second upper mounds of dielectric on the first and second lower mounds of dielectric; depositing (FIG. 4; 408; p. 6, lines 21-22) a second ground shield over the first and second upper and lower mounds of dielectric; depositing (FIG. 4; 410; p. 6, lines 21-24) a third lower dielectric in a valley between the first and second upper and lower mounds of dielectric; depositing (FIG. 4; 412; p. 6, line 25) a conductor on the third lower dielectric; depositing (FIG. 4; 414; p. 6, line 25 – p. 7, line 1) a third upper dielectric on the third lower dielectric; and depositing (FIG. 4; 416; p. 7, lines 1-2) a third ground shield over the third upper dielectric.

In a third embodiment, shielded transmission lines are formed by depositing (FIG. 7; 702; p. 7, lines 13-16) first and second lower mounds of dielectric on a first ground shield; depositing (FIG. 7; 704; p. 7, lines 16-17) ground shield walls on sides of the first and second lower mounds of dielectric; depositing (FIG. 7; 706; p. 7, lines 18-19) a third lower dielectric in a valley between the first and second lower mounds of dielectric; depositing (FIG. 7; 708; p. 7, lines 19-21) conductors on each of the lower mounds of dielectric; depositing (FIG. 7; 710; p. 7, lines 21-23) first and second upper mounds of dielectric on the first and second lower mounds of dielectric, respectively; depositing (FIG. 7; 712; p. 7, lines 23-25) ground shield caps over the first and second upper mounds of dielectric, respectively; depositing (FIG. 7; 714; p. 7, line 25 – p. 8., line 1) a third upper dielectric on the third lower dielectric; and depositing (FIG. 7; 716; p. 7, lines 1-2) a second ground shield over the third upper dielectric.

**Grounds of rejection to be reviewed on appeal**

1. Whether claims 1-3 should be rejected under 35 USC 102(b) as being anticipated by either Leeb (U.S. Pat. No. 5,317,292) or Matsubayashi et al. (U.S. Pat. No. 5,426,399; hereinafter "Matsubayashi").
2. Whether claims 8, 12, 13 and 17 should be rejected under 35 USC 102(b) as being anticipated by Leeb (U.S. Pat. No. 5,317,292).
3. Whether claim 5 should be rejected under 35 USC 103(a) as being unpatentable over Leeb (U.S. Pat. No. 5,317,292) or Matsubayashi et al. (U.S. Pat. No. 5,426,399; hereinafter "Matsubayashi") in view of Dove et al. (U.S. Pat. No. 6,457,979; hereinafter "Dove").

## Argument

1. Whether claims 1-3 should be rejected under 35 USC 102(b) as being anticipated by either Leeb (U.S. Pat. No. 5,317,292) or Matsubayashi et al. (U.S. Pat. No. 5,426,399; hereinafter "Matsubayashi").

Claim 1 recites:

Apparatus, comprising:

- a) first and second mounds of dielectric, respectively encapsulating first and second conductors;
- b) a third dielectric, filling a valley between the first and second mounds of dielectric, and encapsulating a third conductor; and
- c) a first ground shield deposited on at least sides of the first and second mounds of dielectric, abutting the third dielectric.

The Examiner asserts that:

. . . each reference discloses first and second dielectric mounds (1, 5 in Leeb; 10a, 10c in Matsubayashi et al) encapsulating first and second signal conductors (2 in Leeb; 3 in Matsubayashi et al). A third dielectric mound (1, 5 in Fig. 10 of Leeb; 10b in Matsubayashi et al) which encapsulates a signal conductor (3 in Matsubayashi et al; 2 in fig. 10, of Leeb) and which is disposed in a valley adjacent to the first and second dielectric mounds.

11/1/2005 Final Office Action, p. 3.

Even assuming, *arguendo*, that the Examiner has correctly summarized Leeb's and Matsubayashi's teachings, the Examiner has not indicated where Leeb or Matsubayashi teach "a third dielectric, *filling* a valley between the first and second mounds of dielectric, and encapsulating a third conductor". A third dielectric mound "*disposed in* a valley adjacent" first and second dielectric mounds is not equivalent to a third dielectric mound "*filling* a valley between" first and second dielectric mounds. The latter, which is claimed by Appellants, provides for a denser array of quasi-coax transmission lines than does Leeb or

Matsubayashi. Furthermore, if Leeb and Matsubayashi form all of their dielectric mounds in parallel (which it appears is the case), then it is questionable whether Leeb or Matsubayashi really disclose forming a third dielectric mound in "a valley between" first and second mounds of dielectric, as such a valley is never really created.

Claims 1-3 are believed to be allowable over the teachings of Leeb and Matsubayashi for at least the above reasons.

**2. Whether claims 8, 12, 13 and 17 should be rejected under 35 USC 102(b) as being anticipated by Leeb (U.S. Pat. No. 5,317,292).**

Claim 8 recites:

A method for forming shielded transmission lines, comprising:

- a) depositing first and second lower mounds of dielectric on a first ground shield;
- b) depositing conductors on the first and second lower mounds of dielectric;
- c) depositing first and second upper mounds of dielectric on the first and second lower mounds of dielectric;
- d) depositing a second ground shield over the first and second upper and lower mounds of dielectric;
- e) depositing a third lower dielectric in a valley between the first and second upper and lower mounds of dielectric;
- f) depositing a conductor on the third lower dielectric;
- g) depositing a third upper dielectric on the third lower dielectric; and
- h) depositing a third ground shield over the third upper dielectric.

Claim 13 recites:

A method for forming shielded transmission lines, comprising:

- a) depositing first and second lower mounds of dielectric on a first ground shield;
- b) depositing ground shield walls on sides of the first and second lower mounds of dielectric;
- c) depositing a third lower dielectric in a valley between the first and second lower mounds of dielectric;

- d) depositing conductors on each of the lower mounds of dielectric;
- e) depositing first and second upper mounds of dielectric on the first and second lower mounds of dielectric, respectively;
- f) depositing ground shield caps over the first and second upper mounds of dielectric, respectively;
- g) depositing a third upper dielectric on the third lower dielectric; and
- h) depositing a second ground shield over the third upper dielectric.

Appellants assert that claims 8, 12, 13 and 17 are allowable at least for reasons similar to why claim 1 is believed to be allowable. Furthermore, Leeb does not appear to disclose (and the Examiner does not indicate where Leeb discloses) the particular construction methods recited in claims 8 and 13.

In responding to Appellants' above argument, the Examiner asserts in the Final Office Action mailed on November 1, 2005 that Appellants' generic steps of "depositing, etc." are met by Leeb's laminating steps. Appellants strongly disagree. Appellants' claims not only recite certain steps, but also imply an order in which the steps need to be performed.

For example, in claim 8, a "third lower dielectric" is deposited "in a valley between the first and second upper and lower mounds of dielectric". The third lower dielectric cannot be deposited "in a valley" if the valley is not first created. Claim 8 therefore requires 1) first depositing at least the first and second lower mounds of dielectric to create "a valley" between them, and then 2) depositing the third lower dielectric "in the valley". In contrast to this process, Leeb discloses a method wherein a plurality of conductors are all formed in parallel (i.e., at the same time).

In claim 13, ground shields are deposited on mounds of dielectric in two parts - i.e., as "ground shield walls" and "ground shield caps". Again, Leeb is entirely silent regarding this order of steps.

Claims 8, 12, 13 and 17 are therefore believed to be allowable for the reasons presented in Section 3 of these Remarks/Arguments, *supra*.

**3. Whether claim 5 should be rejected under 35 USC 103(a) as being unpatentable over Leeb (U.S. Pat. No. 5,317,292) or Matsubayashi et al. (U.S. Pat. No. 5,426,399; hereinafter "Matsubayashi") in view of Dove et al. (U.S. Pat. No. 6,457,979; hereinafter "Dove").**

Appellants assert that Dove does not teach that which Appellants have already argued is missing from both Leeb and Matsubayashi. As a result, Appellants believe that claim 5 is allowable at least for the reason that it depends from claim 1, which claim is believed to be allowable over the teachings of Leeb and Matsubayashi for the reasons presented in Section 3 of these Remarks/Arguments, *supra*.

**4. Conclusion**

In summary, the art of record does not teach nor suggest the subject matter of Appellants' claims 1-3, 5, 8, 12, 13 and 17. These claims are therefore believed to be allowable.

Respectfully submitted,  
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## Claims Appendix

**Claim 1:** Apparatus, comprising:

- a) first and second mounds of dielectric, respectively encapsulating first and second conductors;
- b) a third dielectric, filling a valley between the first and second mounds of dielectric, and encapsulating a third conductor; and
- c) a first ground shield deposited on at least sides of the first and second mounds of dielectric, abutting the third dielectric.

**Claim 2:** The apparatus of claim 1, further comprising a second ground shield on which the first and second mounds of dielectric are deposited; wherein the first ground shield extends to the second ground shield.

**Claim 3:** The apparatus of claim 2, further comprising a third ground shield deposited on the third dielectric; the third ground shield contacting the first ground shield.

**Claim 4:** The apparatus of claim 1, wherein the first and second mounds of dielectric, and the third dielectric, are glass dielectrics.

**Claim 5:** The apparatus of claim 1, wherein the first and second mounds of dielectric, and the third dielectric, are ceramic dielectrics.

**Claim 6:** The apparatus of claim 1, wherein the first and second mounds of dielectric, and the third dielectric, are KQ CL-90-7858 dielectrics.

**Claim 7:** The apparatus of claim 1, wherein the first and second mounds of dielectric, and the third dielectric, are thickfilm dielectrics.

**Claim 8:** A method for forming shielded transmission lines, comprising:

- a) depositing first and second lower mounds of dielectric on a first ground shield;
- b) depositing conductors on the first and second lower mounds of dielectric;
- c) depositing first and second upper mounds of dielectric on the first and second lower mounds of dielectric;
- d) depositing a second ground shield over the first and second upper and lower mounds of dielectric;
- e) depositing a third lower dielectric in a valley between the first and second upper and lower mounds of dielectric;
- f) depositing a conductor on the third lower dielectric;
- g) depositing a third upper dielectric on the third lower dielectric; and
- h) depositing a third ground shield over the third upper dielectric.

**Claim 9:** The method of claim 8, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are glass dielectrics.

**Claim 10:** The method of claim 8, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are ceramic dielectrics.

**Claim 11:** The method of claim 8, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are KQ CL-90-7858 dielectrics.

**Claim 12:** The method of claim 8, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are thickfilm dielectrics.

**Claim 13:** A method for forming shielded transmission lines, comprising:

- a) depositing first and second lower mounds of dielectric on a first ground shield;
- b) depositing ground shield walls on sides of the first and second lower mounds of dielectric;
- c) depositing a third lower dielectric in a valley between the first and second lower mounds of dielectric;
- d) depositing conductors on each of the lower mounds of dielectric;
- e) depositing first and second upper mounds of dielectric on the first and second lower mounds of dielectric, respectively;
- f) depositing ground shield caps over the first and second upper mounds of dielectric, respectively;
- g) depositing a third upper dielectric on the third lower dielectric; and
- h) depositing a second ground shield over the third upper dielectric.

Claim 14: The method of claim 13, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are glass dielectrics.

Claim 15: The method of claim 13, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are ceramic dielectrics.

Claim 16: The method of claim 13, wherein the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, are KQ CL-90-7858 dielectrics.

Claim 17: The method of claim 13, further comprising polishing the lower dielectrics prior to depositing the conductors.

Claim 18: The method of claim 13, wherein each of the first and second upper and lower mounds of dielectric, and the third upper and lower dielectrics, is

deposited by printing multiple layers of thickfilm dielectric and then firing the layers.

**Claim 19:** The method of claim 18, further comprising polishing the lower dielectrics prior to depositing the conductors.

**Claim 20:** The method of claim 13, wherein the height of the third lower dielectric is less than the heights of the first and second lower mounds of dielectric.

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## **Evidence Appendix**

**No extrinsic evidence was relied upon to support the arguments herein.**

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**Related Proceedings Appendix**

**Appellants are unaware of any Board or court proceedings related to this Application.**